

Patent Claims:

1 - 9 (canceled)

10. (new) A method for the electrolytic deposition of an alloy at least two constituents as a layer on a substrate, comprising:

arranging the alloy in an electrolyte and the at least two constituents of the alloy are suspended and/or dissolved;

using a plurality of repeated voltage pulses for the electrolytic deposition and combined in a sequence that comprises at least two different blocks ;

adapting one block in each case to a constituent of the alloy to achieve optimum deposition of the constituent and a block comprising two or more voltage pulses, and

following a first block of a sequence by a second block in the same sequence of the same polarity and the second block has a higher or lower voltage level on account of being adapted to one constituent of the alloy.

11. (new) The method as claimed in claim 10, wherein mechanical vibrations are imparted to the electrolyte.

12. (new) The method as claimed in claim 11, wherein an ultrasound probe is operated in the electrolyte.

13. (new) The method as claimed in claim 10, wherein a current/voltage pulse is used for the electrolytic deposition and is defined by the current/voltage pulse time profile.

14. (new) The method as claimed in claim 13, wherein a current/voltage pulse time profile is a square-wave or a delta-wave form.

15. (new) The method as claimed in claim 10, wherein both a positive and a negative current/voltage pulses are used for the electrolytic deposition.

16. (new) The method as claimed in claim 10, wherein a block is defined by a number of current pulses, pulse duration, interpulse period, current intensity, and time profile.

17. (new) The method as claimed in claim 10, wherein an MCrAlY layer is deposited as an alloy on a substrate, with M being an element selected from the group consisting of iron, cobalt and nickel.

18. (new) The method as claimed in claim 10, wherein a gradient in the composition of the material is produced in an alloy layer.

19. (new) The method as claimed in claim 10, wherein a base current is superimposed on the current pulses and the interpulse periods.

20. (new) The method as claimed in claim 10, wherein a base current is superimposed on the current pulses or the interpulse periods.